Title (en)

DEVICE AND METHOD FOR TREATING NITROGEN COMPOUND-CONTAINING ACIDIC SOLUTIONS

Title (de)

VORRICHTUNG UND VERFAHREN ZUR BEARBEITUNG STICKSTOFFHALTIGER SAURER LÖSUNGEN

Title (fr)

DISPOSITIF DE TRAITEMENT POUR DES SOLUTIONS ACIDES CONTENANT DES COMPOSÉS AZOTÉS, ET PROCÉDÉ DE TRAITEMENT

Publication

EP 2505559 A4 20140702 (EN)

Application

EP 10833069 A 20101109

Priority

- JP 2009267692 A 20091125
- JP 2010069932 W 20101109

Abstract (en)

[origin: US2012217162A1] A nitrogen compound-containing acidic liquid such as a monoethanolamine-containing dilute hydrochloric acid waste liquid discharged during the regeneration of condensate demineralizers in nuclear power plants or thermal power plants is efficiently and economically treated. A neutralization dialysis device 2 is provided in which a raw water chamber 22 and an alkaline solution chamber 23 are partitioned from each other with an anion exchange membrane 21. The nitrogen compound-containing acidic liquid is passed through the raw water chamber 22, while an alkaline solution is passed through the alkaline solution chamber 23, thereby neutralizing and demineralizing the acidic liquid. Thereafter, the nitrogen compound contained in the neutralized demineralized liquid is concentrated with an electrodeionizer 4. The neutralization dialysis treatment using the anion exchange membrane 21 and the alkaline solution can neutralize and demineralize the nitrogen compound-containing acidic liquid. From the resultant neutralized demineralized liquid, the nitrogen compound can be efficiently separated and concentrated.

IPC 8 full level

C02F 1/44 (2006.01); **B01D 61/26** (2006.01); **B01D 61/28** (2006.01); **B01D 61/46** (2006.01); **B01D 61/48** (2006.01); **C02F 1/04** (2006.01); **C02F 1/469** (2006.01); **G21F 9/06** (2006.01)

CPC (source: EP US)

B01D 61/423 (2022.08 - EP US); **B01D 61/48** (2013.01 - EP US); **B01D 61/58** (2013.01 - EP US); **C02F 1/469** (2013.01 - EP US); **G21F 9/06** (2013.01 - EP US); **G21F 9/12** (2013.01 - EP US); **G21F 9/14** (2013.01 - EP US); C02F 1/4693 (2013.01 - EP US); C02F 1/4695 (2013.01 - EP US); C02F 1/66 (2013.01 - EP US); C02F 2101/38 (2013.01 - EP US); Y02A 20/124 (2018.01 - EP US)

Citation (search report)

- [XY] US 3454490 A 19690708 - WALLACE RICHARD M
- [XY] US 5084180 A 19920128 - BOATENG DANIEL A D [CA]
- [XY] DE 3812183 A1 19891026 - HUELS CHEMISCHE WERKE AG [DE]
- [Y] US 5622681 A 19970422 - GRIERSON JEFFREY G [US], et al
- See also references of WO 2011065222A1

Cited by

CN105008591A; EP2951334A4; US10189727B2; US10189728B2; US10947135B2

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)

US 2012217162 A1 20120830; EP 2505559 A1 20121003; EP 2505559 A4 20140702; JP 2011131210 A 20110707; WO 2011065222 A1 20110603

DOCDB simple family (application)

US 201013505394 A 20101109; EP 10833069 A 20101109; JP 2010069932 W 20101109; JP 2010262511 A 20101125